

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of:) Mail Stop Appeal Brief - Patents
)
Yih-Feng HWANG) Group Art Unit: 2191
)
Application No.: 10/797,068) Examiner: M. Steelman
)
Filed: March 11, 2004)
)
For: INTEGRATION OF)
INFORMATION DISTRIBUTION)
SYSTEMS)

APPEAL BRIEF

U.S. Patent and Trademark Office
Customer Window, Mail Stop Appeal Brief - Patents
Randolph Building
401 Dulany Street
Alexandria, Virginia 22314

Sir:

This Appeal Brief is submitted in response to the Final Office Action mailed November 21, 2007 and in support of the Notice of Appeal filed February 21, 2008.

I. REAL PARTY IN INTEREST

The real party in interest of the present application, solely for purposes of identifying and avoiding potential conflicts of interest by board members due to working in matters in which the member has a financial interest, is Verizon Communications Inc. and its subsidiary companies, which currently include Verizon Business Global, LLC (formerly MCI, LLC) and Cellco Partnership (doing business as Verizon Wireless, and

which includes as a minority partner affiliates of Vodafone Group Plc). Verizon Communications Inc. or one of its subsidiary companies is an assignee of record of the present application.

II. RELATED APPEALS AND INTERFERENCES

Appellant is unaware of any related appeals, interferences or judicial proceedings.

III. STATUS OF CLAIMS

Claims 1-28 are pending in this application. Claims 1-28 have been rejected. Claims 1-28 are the subject of the present appeal.

IV. STATUS OF AMENDMENTS

No Amendment has been filed subsequent to the Final Office Action mailed November 21, 2007.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Each of the independent claims involved in this appeal is recited below, followed in parenthesis by examples of where support can be found in the specification and drawings for the claimed subject matter. In addition, each dependent claim argued separately below is also summarized in a similar manner.

Claim 1 recites: A method of integrating software systems comprising:
identifying a scope of the integration based on a multi-level top-down approach (e.g.,

401, 402, Fig. 4; page 9, line 1 – page 10, line 8); identifying faults in business rules that define software in the scope of the integration by applying generic depth-first search (DFS)-based techniques to the business rules (e.g., 406, Fig. 4; page 10, line 17 – page 11, line 10); and modifying the business rules based on the identified faults (e.g., 407, Fig. 4; page 10, line 17 – page 11, line 10).

Claim 3 recites: The method of claim 1, where the multi-level top-down approach includes: a first level that includes high-level software systems (e.g., 201, Fig. 2; page 7, lines 4-8; page 9, lines 1-6).

Claim 4 recites: The method of claim 3, where the multi-level top-down approach further includes: a second level that includes business processes of the high-level software systems (e.g., 202, Fig. 2; page 7, lines 9-17; page 9, line 14 – page 10, line 8).

Claim 6 recites: The method of claim 4, further including: comparing the business processes to locate similar business processes that are to be integrated (e.g., page 9, line 14 – page 10, line 8).

Claim 9 recites: A computer-implemented system for integrating information distribution systems comprising: means for assisting a user to identify a scope of the integration using a multi-level top-down approach, the identified scope including a set of business processes that are to be integrated and a set of business rules that define the business processes (e.g., page 9, line 14 – page 10, line 16); and a fault detection

component configured to identify faults in the business rules by applying generic depth-first search (DFS)-based techniques to the business rules (e.g., page 10, line 17 – page 11, line 10).

Claim 11 recites: The computer-implemented system of claim 9, where the multi-level top-down approach includes: a first level that includes high-level software systems (e.g., 201, Fig. 2; page 7, lines 4-8; page 9, lines 1-6).

Claim 12 recites: The computer-implemented system of claim 11, where the multi-level top-down approach further includes: a second level that includes the business processes, which define the high-level software systems (e.g., 202, Fig. 2; page 7, lines 9-17; page 9, line 14 – page 10, line 8).

Claim 14 recites: The computer-implemented system of claim 12, where the means for assisting compares the business processes to locate similar business processes that are to be integrated (e.g., page 9, line 14 – page 10, line 8).

Claim 17 recites: A method of integrating information distribution systems of merging entities, the method comprising: identifying top-level software systems that are to be integrated (e.g., 401, Fig. 4; page 9, lines 1-6); identifying business processes in the top-level software systems (e.g., 402, Fig. 4; page 9, line 14 – page 10, line 8); comparing the identified business processes to determine business processes that are related enough to be candidates for integration (e.g., page 9, line 14 – page 10, line 8); identifying

business rules that define the business processes (e.g., 405, Fig. 4; page 10, lines 9-16); and identifying faults in the business rules by applying generic depth-first search (DFS)-based techniques to the business rules (e.g., 406, Fig. 4; page 10, line 17 – page 11, line 10).

Claim 19 recites: The method of claim 17, where comparing the identified business processes includes finding pairs of business processes that perform similar functions (e.g., page 9, line 14 – page 10, line 8).

Claim 22 recites: A computer-readable medium consisting of a physical or logical memory device containing instructions for execution by one or more processors, the computer-readable medium including: instructions for assisting a user to identify a scope of an integration of information distribution systems by using a multi-level top-down approach, the identified scope including a set of business processes that are to be integrated and a set of business rules that define the business processes (e.g., page 9, line 14 – page 10, line 16); and instructions for identifying faults in the business rules by applying generic depth-first search (DFS)-based techniques to the business rules (e.g., page 10, line 17 – page 11, line 10).

Claim 24 recites: The computer-readable medium of claim 22, where the multi-level top-down approach includes: a first level that includes high-level software systems (e.g., 201, Fig. 2; page 7, lines 4-8).

Claim 25 recites: The computer-readable medium of claim 24, where the multi-level top-down approach includes: a second level that includes the business processes, which define the high-level software systems (e.g., 202, Fig. 2; page 7, lines 9-17).

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

A. Claims 1, 3, 4, 6-9, 11, 12, 14-20, 22, 24, 25, 27, and 28 have been rejected under 35 U.S.C. § 102(e) as being anticipated by CHAN et al. (U.S. Patent No. 6,910,028).

B. Claims 2, 10, 21, and 23 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over CHAN et al. in view of HWANG ("Detecting Faults In Chained-Inference Rules In Information Distribution Systems," Dissertation, George Mason University; 1997).

C. Claims 5, 13, and 26 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over CHAN et al. in view of BAHRAMI (U.S. Patent Application Publication No. 2004/0078777).

VII. ARGUMENT

A. The rejection under 35 U.S.C. § 102 based on CHAN et al. should be reversed.

The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention always rests upon the Examiner. In re Oetiker, 977 F.2d 1443, 24 U.S.P.Q.2d 1443 (Fed. Cir. 1992). A proper rejection under 35 U.S.C. § 102 requires that a single reference teach every aspect of the claimed invention. Any feature not

directly taught must be inherently present. Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 2 USPQ2d 1051 (Fed. Cir. 1987).

1. Claims 1, 7, and 8

Claim 1 recites a method of integrating software systems. The method includes identifying a scope of the integration based on a multi-level top-down approach; identifying faults in business rules that define software in the scope of the integration by applying generic depth-first search (DFS)-based techniques to the business rules; and modifying the business rules based on the identified faults. CHAN et al. does not disclose or suggest this combination of features.

For example, CHAN et al. does not disclose or suggest identifying a scope of integration based on a multi-level top-down approach, identifying faults in business rules that define software in the scope of the integration of software systems by applying generic depth-first search (DFS)-based techniques to the business rules, and modifying the business rules based on the identified faults. The Examiner appears to rely on column 3, line 58 to column 4, line 20; column 5, line 29; Fig. 2; column 6, lines 11-12 (which describes Fig. 2) and 43-61; column 7, lines 44-52; and column 8, lines 24-32, 43-46, and 67 of CHAN et al. as allegedly disclosing these features (final Office Action, pp. 4-5).

Appellant respectfully disagrees with the Examiner's interpretation of CHAN et al.

At column 3, line 58 – column 4, line 20, CHAN et al. discloses:

It is an object of the present invention to provide for a rule-base knowledge system a conflict handling and assimilator mechanism for enabling the exchange or merger of rules with different format and, resolving conflicts among the merged rules.

It is a further object of the present invention to provide for a flexible assimilator service that allows for the exchange or merger of rulesets (e.g., business policies) with different formats in a distributed environment such as the World-Wide-Web or Internet.

It is another object of the present invention to provide for a flexible assimilator service that allows for the exchange or merger of rulesets (e.g., business policies) with different originating formats in a distributed environment such as the World-Wide-Web or Internet, and further enables the resulting merged rules to be translated to any other formats other than the originating ones.

It is another object of the present invention to provide for a flexible assimilator service that allows for the exchange or merger of rulesets (e.g., business policies) with different originating formats in a distributed environment such as the World-Wide-Web or Internet, and further enables the resulting merged rules to be translated to any "rule-engine" neutral format thus enabling the ruleset to be used in any available rule engine which fits the application.

According to the invention, there is provided a system and method for merging two or more rulesets provided in rule-based systems associated with applications executing at different locations, each ruleset comprising rules in potential conflict with each other.

This section of CHAN et al. discloses a system for enabling the exchange or merger of rules with different formats and for resolving conflicts among the merged rules. This section of CHAN et al., thus, discloses merging rules and does not disclose a multi-level top-down approach for identifying a scope of integration, identifying faults, or modifying business rules based on the identified faults. This section of CHAN et al. further does not disclose or suggest applying generic depth-first search (DFS)-based techniques.

Therefore, this section of CHAN et al. cannot disclose or suggest identifying a scope of integration based on a multi-level top-down approach, identifying faults in business rules that define software in the scope of the integration of software systems by applying generic depth-first search (DFS)-based techniques to the business rules, and modifying the business rules based on the identified faults, as recited in claim 1.

At column 5, line 29, CHAN et al. discloses a merge policy that defines rules and conflict resolution prioritization schemes utilized by a system to enable the merging of rule sets. This section of CHAN et al. does not disclose, suggest or even mention a multi-level top-down approach for identifying a scope of integration, identifying faults, or

modifying business rules based on the identified faults. Therefore, this section of CHAN et al. cannot disclose or suggest identifying a scope of integration based on a multi-level top-down approach, identifying faults in business rules that define software in the scope of the integration of software systems by applying generic depth-first search (DFS)-based techniques to the business rules, and modifying the business rules based on the identified faults, as recited in claim 1.

At column 6, lines 11-12, CHAN et al. discloses that Fig. 2 is a diagram depicting the high-level interaction between various components underlying conflict handling and assimilator service for rule-based knowledge systems. While this section of CHAN et al. mentions "high-level," Fig. 2 of CHAN et al. discloses the interaction between components of the conflict handling system, not a multi-level top-down approach for identifying a scope of integration. This section of CHAN et al. further does not disclose, suggest or even mention identifying faults and modifying business rules based on the identified faults. Therefore, this section of CHAN et al. cannot disclose or suggest identifying a scope of integration based on a multi-level top-down approach, identifying faults in business rules that define software in the scope of the integration of software systems by applying generic depth-first search (DFS)-based techniques to the business rules, and modifying the business rules based on the identified faults, as recited in claim 1.

At column 6, lines 43-61, CHAN et al. discloses:

Generally, the role of the Conflict Transformer 15 is to analyze the input rulesets for conflicts and resolve conflicts among rules from one or more rulesets based on the user-defined merge policy. The merge policy expressed in CLP includes syntax and semantics to express conflict resolution via the priority specification and mutual exclusion statements. A more detailed explanation on the operation and mechanism of the Conflict Transformer may be found in the references entitled Compiling Prioritized Default Rules Into Ordinary Logic Programs by Benjamin Grosz, IBM Research Report RC21472,

May 7, 1999, and available from <http://www.research.ibm.com/rules/paps/rc21472.pdf>; and 2) A Courteous Compiler From Generalized Courteous Logic Programs to Ordinary Logic Programs by Benjamin Grosz, Supplementary Update follow-on to IBM Research rc21472, Jul. 2, 1999, and available from <http://www.research.ibm.com/rules/paps/gclp-report1.pdf>, the whole contents and disclosure of each, and references cited therein, are incorporated by reference as if fully set forth herein.

This section of CHAN et al. discloses that the role of the Conflict Transformer is to analyze the input rulesets for conflicts and resolve conflicts among rules from one or more rulesets based on a user-defined merge policy. This section of CHAN et al. has nothing to do with identifying a scope of integration based on a multi-level top-down approach. The Examiner has not indicated where CHAN et al. discloses different levels or where CHAN et al. discloses identifying a scope of integration based on a multi-level top-down approach. CHAN et al. further does not disclose applying generic depth-first search (DFS)-based techniques to business rules. Therefore, CHAN et al. does not disclose or suggest identifying a scope of integration based on a multi-level top-down approach, identifying faults in business rules that define software in the scope of the integration of software systems by applying generic depth-first search (DFS)-based techniques to the business rules, and modifying the business rules based on the identified faults, as recited in claim 1.

At column 7, lines 44-52, CHAN et al. discloses that a Conflict Transformer receives an input ruleset and a facts premise, analyzes the rules for conflicts, introduces new rules, and predicates based on the specifications of a merge policy. This section of CHAN et al. does not disclose or suggest identifying a scope of integration based on a multi-level top-down approach, identifying faults in business rules that define software in the scope of the integration of software systems by applying generic depth-first search (DFS)-based techniques to the business rules, and modifying the business rules based on

the identified faults, as recited in claim 1.

At column 8, lines 24-32, CHAN et al. discloses:

Partially ordered priorities are relatively natural to specify. For example, they represent well preference for more recently acquired rules (e.g., as in database updating or legislation), or for rules from more authoritative sources (e.g., as in bureaucratic workflow, security authorization, or legal jurisdiction), or for rules that are more specific (e.g., as in object-oriented inheritance or special-case exceptions). S1 and S2 may or may not contain the expressive features to specify priorities and/or mutual exclusions.

This section of CHAN et al. discloses that partially ordered priorities represent a preference for more recently acquired rules, rules from more authoritative sources, or rules that are more specific. This section of CHAN et al. does not disclose, suggest or even mention a multi-level top-down approach for identifying a scope of integration, identifying faults, or modifying business rules based on the identified faults. Therefore, this section of CHAN et al. cannot disclose or suggest identifying a scope of integration based on a multi-level top-down approach, identifying faults in business rules that define software in the scope of the integration of software systems by applying generic depth-first search (DFS)-based techniques to the business rules, and modifying the business rules based on the identified faults, as recited in claim 1.

At column 8, lines 43-46, CHAN et al. discloses that two businesses may merge rulesets to determine how compatible their policies are. This section of CHAN et al. does not disclose, suggest, or even mention a multi-level top-down approach for identifying a scope of integration, identifying faults and modifying business rules based on the identified faults. Therefore, this section of CHAN et al. cannot disclose or suggest identifying a scope of integration based on a multi-level top-down approach, identifying faults in business rules that define software in the scope of the integration of software systems by applying generic depth-first search (DFS)-based techniques to the business

rules, and modifying the business rules based on the identified faults, as recited in claim 1.

At column 8, line 67, CHAN et al. discloses that inferring conclusions about the “overrides” predicate, derived from rules possibly via chaining, is permitted. This section of CHAN et al. does not disclose, suggest, or even mention a multi-level top-down approach for identifying a scope of integration, identifying faults and modifying business rules based on the identified faults. Therefore, this section of CHAN et al. cannot disclose or suggest identifying a scope of integration based on a multi-level top-down approach, identifying faults in business rules that define software in the scope of the integration of software systems by applying generic depth-first search (DFS)-based techniques to the business rules, and modifying the business rules based on the identified faults, as recited in claim 1.

On page 3 of the final Office Action, the Examiner alleges that Appellant has defined faults to include conflicts and relies on column 6, lines 42-45 of CHAN et al. for allegedly disclosing the above-feature of claim 1. Appellant respectfully disagrees with the Examiner's assertion. As noted above, at column 6, lines 42-45, CHAN et al. discloses that the role of the Conflict Transformer is to analyze input rulesets for conflicts and resolve conflicts among rules from one or more rulesets based on a user-defined merge policy. This section of CHAN et al. discloses resolving conflicts based on a user-defined merge policy, not identifying a scope of integration based on a multi-level top-down approach, identifying faults in business rules that define software in the scope of the integration of software systems by applying generic depth-first search (DFS)-based techniques to the business rules, and modifying the business rules based on the identified

faults, as recited in claim 1. In fact, nowhere does CHAN et al. disclose applying generic depth-first search (DFS)-based techniques to business rules. The Examiner continues to ignore this feature. CHAN et al. does not disclose or suggest identifying a scope of integration based on a multi-level top-down approach, identifying faults in business rules that define software in the scope of the integration by applying generic depth-first search (DFS)-based techniques to the business rules, and modifying the business rules based on the identified faults, as recited in claim 1.

On page 2 of the Advisory Action, the Examiner relies on column 8, line 67 of CHAN et al. as allegedly disclosing “backward chaining / multi level top down approach.” Appellant respectfully disagrees with the Examiner’s interpretation of CHAN et al.

As noted above, at column 8, line 67, CHAN et al. discloses that inferring conclusions about the “overrides” predicate, derived from rules possibly via chaining, is permitted. This section of CHAN et al. discloses that conclusions about the “overrides” predicate may have been derived from rules by chaining. This section of CHAN et al. does not disclose or suggest backward chaining or a multi-level top-down approach, as alleged by the Examiner. In fact, this section of CHAN et al. deals with identifying and resolving conflicts among rules (column 8, lines 55-56) and specifically deals with prioritization ordering (column 8, line 65). This section of CHAN et al. has nothing to do with identifying a scope of integration based on a multi-level top-down approach, as recited in claim 1.

On page 2 of the Advisory Action, the Examiner further alleges that column 7, lines 44-45 of CHAN et al. discloses “backward inferencing similar to Prolog” and that

“[i]nherently backward inferencing uses a depth first search.” Appellant respectfully disagrees with the Examiner's allegation.

At column 7, lines 42-45, CHAN et al. discloses that XSB, a particular ordinary-logic-program (OLP) system that is a leading academic OLP system and does backward inferencing similar to Prolog, is supported as an available choice for rule language. Therefore, this section of CHAN et al. discloses that a particular rule language format that does backward inferencing is supported as a choice for target rule language. This section of CHAN et al. broadly defines one rule language format that is a possible choice for target rule language. While this section of CHAN et al. mentions “backward inferencing” and regardless of the validity of the Examiner's statement that “[i]nherently backward inferencing uses a depth first search,” this section of CHAN et al. has nothing to do with identifying a scope of integration based on a multi-level top-down approach, as recited in claim 1.

For at least the foregoing reasons, Appellant submits that the rejection of claim 1 under 35 U.S.C. § 102(e) based on CHAN et al. is improper. Accordingly, Appellant requests that the rejection be reversed.

Claims 7 and 8 depend from claim 1. Therefore, Appellant requests that the rejection of these claims be reversed for at least the reasons given above with respect to claim 1.

2. Claim 3

Claim 3 depends from claim 1. Therefore, Appellant requests that the rejection of claim 3 be reversed for at least the reasons given above with respect to claim 1.

Moreover, claim 3 recites additional features not disclosed or suggested by CHAN et al.

For example, claim 3 recites that the multi-level top-down approach includes a first level that includes high-level software systems. The Examiner relies on elements S1 and S2 of Fig. 1; Fig. 2; column 6, lines 11-12 (which describes Fig. 2), and column 8, lines 3-4 of CHAN et al. as allegedly disclosing this feature (final Office Action, pg. 5). Appellant respectfully disagrees with the Examiner's interpretation of CHAN et al.

References S1 and S2 of CHAN et al. are two rule systems that may be different or the same, with S1 being part of a larger application App_1 and S2 being part of a larger application App_2 (column 5, lines 13-17). References S1 and S2 have nothing to do with a multi-level top-down approach that includes a first level that includes high-level software systems, as recited in claim 3. Rather, references S1 and S2 are rule systems of separate applications.

As noted above, at column 6, lines 11-12, CHAN et al. discloses that Fig. 2 is a diagram depicting the high-level interaction between various components underlying conflict handling and assimilator service for rule-based knowledge systems. While this section of CHAN et al. mentions "high-level," Fig. 2 of CHAN et al. discloses the interaction between components of the conflict handling system, not a multi-level top-down approach that includes a first level that includes high-level software systems, as recited in claim 3.

At column 8, lines 3-4, CHAN et al. discloses that a merge policy may specify that the relative priority of rules is based on a relative authority level of the originating source application of those rules. This section of CHAN et al. has nothing to do with high-level software systems. Therefore, this section of CHAN et al. does not disclose or

suggest a multi-level top-down approach that includes a first level that includes high-level software systems, as recited in claim 3.

For at least these additional reasons, Appellant submits that the rejection of claim 3 under 35 U.S.C. § 102(e) based on CHAN et al. is improper. Accordingly, Appellant requests that the rejection be reversed.

3. Claim 4

Claim 4 depends from claim 3. Therefore, Appellant requests that the rejection of claim 4 be reversed for at least the reasons given above with respect to claim 3.

Moreover, claim 4 recites additional features not disclosed or suggested by CHAN et al.

For example, claim 4 recites that the multi-level top-down approach further includes a second level that includes business processes of the high-level software systems. The Examiner relies on references R1 and R2 of Fig. 1 as allegedly disclosing this feature (final Office Action, pg. 5). Appellant respectfully disagrees with the Examiner's interpretation of CHAN et al.

References R1 and R2 of CHAN et al. represent the current rulesets of rule systems S1 and S2, respectively, that are to merge. Ruleset R2 may contain update information for ruleset R1 (column 5, lines 19-22). References R1 and R2 of CHAN et al. represent rulesets of rule systems, not business processes of high-level software systems. In fact, reference R1 and R2 of CHAN et al. have nothing to do with business processes of high-level software systems. Therefore, references R1 and R2 of CHAN et al. do not disclose or suggest that the multi-level top-down approach further includes a second level that includes business processes of the high-level software systems, as recited in claim 4.

For at least this additional reason, Appellant submits that the rejection of claim 4 under 35 U.S.C. § 102(e) based on CHAN et al. is improper. Accordingly, Appellant requests that the rejection be reversed.

4. Claim 6

Claim 6 depends from claim 4. Therefore, Appellant requests that the rejection of claim 6 be reversed for at least the reasons given above with respect to claim 4.

Moreover, claim 6 recites additional features not disclosed or suggested by CHAN et al.

For example, claim 6 recites comparing the business processes to locate similar business processes that are to be integrated. The Examiner relies on column 5, lines 29-32 of CHAN et al. as allegedly disclosing this feature (final Office Action, pg. 6). Appellant respectfully disagrees with the Examiner's interpretation of CHAN et al.

At column 5, lines 29-32, CHAN et al. discloses a merge policy that defines rules and conflict resolution prioritization schemes utilized by a system for enable the merging of rulesets. This section of CHAN et al. discloses that there are rules for enabling the merging of rulesets and does not disclose or suggest comparing business processes to locate similar business process that are to be integrated, as recited in claim 6.

For at least this additional reason, Appellant submits that the rejection of claim 6 under 35 U.S.C. § 102(e) based on CHAN et al. is improper. Accordingly, Appellant requests that the rejection be reversed.

5. Claims 9, 15, and 16

Claim 9 recites features similar to, yet possibly of different scope than, features

recited above with respect to claim 1. Therefore, Appellant requests that the rejection of claim 9 be reversed for at least reasons similar to the reasons given above with respect to claim 1.

Claims 15 and 16 depend from claim 9. Therefore, Appellant requests that the rejection of these claims be reversed for at least the reasons given above with respect to claim 9.

6. Claim 11

Claim 11 depends from claim 9. Therefore, Appellant requests that the rejection of claim 11 be reversed for at least the reasons given above with respect to claim 9. Moreover, claim 11 recites additional features not disclosed or suggested by CHAN et al.

For example, claim 11 recites features similar to, yet possibly of different scope than, features recited above with respect to claim 3. Therefore, Appellant requests that the rejection of claim 11 be reversed for at least reasons similar to the reasons given above with respect to claim 3.

7. Claim 12

Claim 12 depends from claim 11. Therefore, Appellant requests that the rejection of claim 12 be reversed for at least the reasons given above with respect to claim 11. Moreover, claim 12 recites additional features not disclosed or suggested by CHAN et al.

For example, claim 12 recites features similar to, yet possibly of different scope than, features recited above with respect to claim 4. Therefore, Appellant requests that the rejection of claim 12 be reversed for at least reasons similar to the reasons given above

with respect to claim 4.

8. Claim 14

Claim 14 depends from claim 12. Therefore, Appellant requests that the rejection of claim 14 be reversed for at least the reasons given above with respect to claim 12.

Moreover, claim 12 recites additional features not disclosed or suggested by CHAN et al.

For example, claim 14 recites features similar to, yet possibly of different scope than, features recited above with respect to claim 6. Therefore, Appellant requests that the rejection of claim 14 be reversed for at least reasons similar to the reasons given above with respect to claim 6.

9. Claims 17, 18, and 20

Claim 17 recites features similar to, yet possibly of different scope than, features recited above with respect to claim 1. Therefore, Appellant requests that the rejection of claim 17 be reversed for at least reasons similar to the reasons given above with respect to claim 1.

Claims 18 and 20 depend from claim 17. Therefore, Appellant requests that the rejection of these claims be reversed for at least the reasons given above with respect to claim 17.

10. Claim 19

Claim 19 depends from claim 17. Therefore, Appellant requests that the rejection of claim 19 be reversed for at least the reasons given above with respect to claim 17.

Moreover, claim 19 recites additional features not disclosed or suggested by CHAN et al.

For example, claim 19 recites features similar to, yet possibly of different scope than, features recited above with respect to claim 6. Therefore, Appellant requests that the rejection of claim 19 be reversed for at least reasons similar to the reasons given above with respect to claim 6.

11. Claims 22, 27, and 28

Claim 22 recites features similar to, yet possibly of different scope than, features recited above with respect to claim 1. Therefore, Appellant requests that the rejection of claim 22 be reversed for at least reasons similar to the reasons given above with respect to claim 1.

Claims 27 and 28 depend from claim 22. Therefore, Appellant requests that the rejection of these claims be reversed for at least the reasons given above with respect to claim 22.

12. Claim 24

Claim 24 depends from claim 22. Therefore, Appellant requests that the rejection of claim 24 be reversed for at least the reasons given above with respect to claim 22.

Moreover, claim 24 recites additional features not disclosed or suggested by CHAN et al.

For example, claim 24 recites features similar to, yet possibly of different scope than, features recited above with respect to claim 3. Therefore, Appellant requests that the rejection of claim 24 be reversed for at least reasons similar to the reasons given above with respect to claim 3.

13. Claim 15

Claim 25 depends from claim 24. Therefore, Appellant requests that the rejection of claim 25 be reversed for at least the reasons given above with respect to claim 24.

Moreover, claim 25 recites additional features not disclosed or suggested by CHAN et al.

For example, claim 25 recites features similar to, yet possibly of different scope than, features recited above with respect to claim 4. Therefore, Appellant requests that the rejection of claim 25 be reversed for at least reasons similar to the reasons given above with respect to claim 4.

**B. Rejection under 35 U.S.C. § 103 based on CHAN et al. and HWANG
should be reversed.**

The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention always rests upon the Examiner. In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In rejecting a claim under 35 U.S.C. § 103, the Examiner must provide a factual basis to support the conclusion of obviousness. In re Warner, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967). Based upon the objective evidence of record, the Examiner is required to make the factual inquiries mandated by Graham v. John Deere Co., 86 S.Ct. 684, 383 U.S. 1, 148 USPQ 459 (1966). The Examiner is also required to explain how and why one having ordinary skill in the art would have been realistically motivated to modify an applied reference and/or combine applied references to arrive at the claimed invention. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 5 USPQ2d 1434 (Fed. Cir. 1988).

In establishing the requisite motivation, it has been consistently held that the requisite motivation to support the conclusion of obviousness is not an abstract concept, but must stem from the prior art as a whole to impel one having ordinary skill in the art to modify a reference or to combine references with a reasonable expectation of successfully achieving some particular realistic objective. See, for example, Interconnect Planning Corp. v. Feil, 227 USPQ 543 (Fed. Cir. 1985). Consistent legal precedent admonishes against the indiscriminate combination of prior art references. Carella v. Starlight Archery, 804 F.2d 135, 231 USPQ 644 (Fed. Cir. 1986); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 227 USPQ 657 (Fed. Cir. 1985).

1. Claim 2

Claim 2 depends from claim 1. Without acquiescing in the Examiner's rejection of claim 2, Appellant submits that the disclosure of HWANG does not remedy the deficiencies in the disclosures of CHAN et al. set forth above with respect to claim 1. Therefore, Appellant requests that the rejection of claim 2 be reversed for at least the reasons given above with respect to claim 1.

2. Claim 10

Claim 10 depends from claim 9. Without acquiescing in the Examiner's rejection of claim 10, Appellant submits that the disclosure of HWANG does not remedy the deficiencies in the disclosures of CHAN et al. set forth above with respect to claim 9. Therefore, Appellant requests that the rejection of claim 10 be reversed for at least the reasons given above with respect to claim 9.

3. Claim 21

Claim 21 depends from claim 17. Without acquiescing in the Examiner's rejection of claim 21, Appellant submits that the disclosure of HWANG does not remedy the deficiencies in the disclosures of CHAN et al. set forth above with respect to claim 17. Therefore, Appellant requests that the rejection of claim 21 be reversed for at least the reasons given above with respect to claim 17.

4. Claim 23

Claim 23 depends from claim 22. Without acquiescing in the Examiner's

rejection of claim 23, Appellant submits that the disclosure of HWANG does not remedy the deficiencies in the disclosures of CHAN et al. set forth above with respect to claim 22. Therefore, Appellant requests that the rejection of claim 23 be reversed for at least the reasons given above with respect to claim 22.

C. Rejection under 35 U.S.C. § 103 based on CHAN et al. and BAHRAMI should be reversed.

1. Claim 5

Claim 5 depends from claim 4. Without acquiescing in the Examiner's rejection of claim 5, Appellant submits that the disclosure of BAHRAMI does not remedy the deficiencies in the disclosures of CHAN et al. set forth above with respect to claim 4. Therefore, Appellant requests that the rejection of claim 5 be reversed for at least the reasons given above with respect to claim 4.

2. Claim 13

Claim 13 depends from claim 12. Without acquiescing in the Examiner's rejection of claim 13, Appellant submits that the disclosure of BAHRAMI does not remedy the deficiencies in the disclosures of CHAN et al. set forth above with respect to claim 12. Therefore, Appellant requests that the rejection of claim 13 be reversed for at least the reasons given above with respect to claim 12.

3. Claim 26

Claim 26 depends from claim 25. Without acquiescing in the Examiner's rejection of claim 26, Appellant submits that the disclosure of BAHRAMI does not remedy the deficiencies in the disclosures of CHAN et al. set forth above with respect to claim 25. Therefore, Appellant requests that the rejection of claim 26 be reversed for at least the reasons given above with respect to claim 25.

VIII. CONCLUSION

In view of the foregoing arguments, Appellants respectfully solicit the Honorable Board to reverse the Examiner's rejections of claims 1-28.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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IX. APPENDIX

1. A method of integrating software systems comprising:
identifying a scope of the integration based on a multi-level top-down approach;
identifying faults in business rules that define software in the scope of the
integration by applying generic depth-first search (DFS)-based techniques to the business
rules; and
modifying the business rules based on the identified faults.
2. The method of claim 1, where identifying faults in the business rules includes:
representing the business rules using a transition-directed graph (TDG)
representation.
3. The method of claim 1, where the multi-level top-down approach includes:
a first level that includes high-level software systems.
4. The method of claim 3, where the multi-level top-down approach further includes:
a second level that includes business processes of the high-level software systems.
5. The method of claim 4, where the multi-level top-down approach further includes:
a third level that includes business rules that are defined as transitions in the
business processes;
a fourth level that includes interface functions that define communications
between the business rules; and

a fifth level that includes data used by the business rules and the interface functions.

6. The method of claim 4, further including:

comparing the business processes to locate similar business processes that are to be integrated.

7. The method of claim 1, where identifying the scope of the integration is performed on software systems from multiple merging entities.

8. The method of claim 1, where the identified faults include faults of at least one of inconsistency, contradiction, circularity, subsumption, redundancy, or incompleteness.

9. A computer-implemented system for integrating information distribution systems comprising:

means for assisting a user to identify a scope of the integration using a multi-level top-down approach, the identified scope including a set of business processes that are to be integrated and a set of business rules that define the business processes; and

a fault detection component configured to identify faults in the business rules by applying generic depth-first search (DFS)-based techniques to the business rules.

10. The computer-implemented system of claim 9, where the fault detection component is further configured to represent the business rules using a transition-directed

graph (TDG) representation.

11. The computer-implemented system of claim 9, where the multi-level top-down approach includes:

a first level that includes high-level software systems.

12. The computer-implemented system of claim 11, where the multi-level top-down approach further includes:

a second level that includes the business processes, which define the high-level software systems.

13. The computer-implemented system of claim 12, where the multi-level top-down approach further includes:

a third level that includes the business rules defined as transitions in the business processes;

a fourth level that includes interface functions that define communications between the business rules; and

a fifth level that includes data used by the business rules and the interface functions.

14. The computer-implemented system of claim 12, where the means for assisting compares the business processes to locate similar business processes that are to be integrated.

15. The computer-implemented system of claim 9, where the scope of the integration is defined for software systems from multiple merging entities.

16. The computer-implemented system of claim 9, where the identified faults include faults of at least one of inconsistency, contradiction, circularity, subsumption, redundancy, or incompleteness.

17. A method of integrating information distribution systems of merging entities, the method comprising:

- identifying top-level software systems that are to be integrated;
- identifying business processes in the top-level software systems;
- comparing the identified business processes to determine business processes that are related enough to be candidates for integration;
- identifying business rules that define the business processes; and
- identifying faults in the business rules by applying generic depth-first search (DFS)-based techniques to the business rules.

18. The method of claim 17, further comprising:

- modifying the business rules based on the identified faults.

19. The method of claim 17, where comparing the identified business processes includes finding pairs of business processes that perform similar functions.

20. The method of claim 17, where the identified faults include faults of at least one of inconsistency, contradiction, circularity, subsumption, redundancy, or incompleteness.

21. The method of claim 17, where identifying faults in the business rules further includes:

representing the business rules using a transition-directed graph (TDG) representation.

22. A computer-readable medium consisting of a physical or logical memory device containing instructions for execution by one or more processors, the computer-readable medium including:

instructions for assisting a user to identify a scope of an integration of information distribution systems by using a multi-level top-down approach, the identified scope including a set of business processes that are to be integrated and a set of business rules that define the business processes; and

instructions for identifying faults in the business rules by applying generic depth-first search (DFS)-based techniques to the business rules.

23. The computer-readable medium of claim 22, where the instruction for identifying faults represent the business rules using a transition-directed graph (TDG) representation.

24. The computer-readable medium of claim 22, where the multi-level top-down

approach includes:

a first level that includes high-level software systems.

25. The computer-readable medium of claim 24, where the multi-level top-down approach includes:

a second level that includes the business processes, which define the high-level software systems.

26. The computer-readable medium of claim 25, where the multi-level top-down approach includes:

a third level that includes the business rules defined as transitions in the business processes;

a fourth level that includes interface functions that define communications between the business rules; and

a fifth level that includes data used by the business rules and the interface functions.

27. The computer-readable medium of claim 22, where the scope of the integration is defined for information distribution systems from multiple merging entities.

28. The computer-readable medium of claim 22, where the identified faults include faults of at least one of inconsistency, contradiction, circularity, subsumption, or incompleteness.

X. EVIDENCE APPENDIX

None

XI. RELATED PROCEEDINGS APPENDIX

None